

## **NHLBI ACUC MEETING MINUTES**

March 11, 2020

Building 10/FAES room 6 (B1C208)

1:00pm

### **Members Present**

Dr. Tish Murphy, Systems Biology Center, Chair ACUC

Redacted by agreement

Dr. James Hawkins, Animal Program Division, APD

Redacted by agreement

### **Members Absent**

Redacted by agreement

### **Guest**

Redacted by agreement

### **A. New Protocols**

1. (b)(5)

❖

- ❖ This protocol was Tabled and the decision was unanimous to review the modifications/changes by the Designated Member Review (DMR) process. T. Murphy and J. Hawkins will conduct the DMR. The modifications needed to secure final approval are:

❖ Stipulations:

(b)(5)

### **B. Protocols Submitted for Renewal**

1. Redacted by agreement Examination of knockout and transgenic mice to define the role of complement proteins in the immune response, Claudia Kemper. *Request for 60-day reapproval.*

- ❖ This protocol was unanimously Approved as written.

### C. Protocols Requesting a Significant Modification

1. Amendment #16 to [Redacted by agreement] Stem Cells and Neuro-Vascular Development and Patterning [Redacted by agreement]
  - ❖ This amendment was unanimously Approved as written. [Redacted by agreement] recused himself from the vote.
2. Amendment #2 to [Redacted by agreement] Chimeric Antigen Receptor T-cell (CAR-T) therapy in non-human primates [Redacted by agreement]
  - ❖ This request is for an Exemption to the Guide for just this one animal for a defined time period of 30 days. The current ICU cage size is limited to a 10 kg animal. The animal is able to fully stand and move around fully. The PI will report to Dr. Hawkins when the study is finished and the monkey is back into a larger cage.
  - ❖ This amendment was Approved unanimously with the following Administrative change:
    - Section F: The PI clarified that the animal is able to fully stand and move around. Changed “small in size” → to “small in stature” to better describe that the animal is short and chubby.

### D. Protocols Approved at the February 12<sup>th</sup> Meeting

1. None.

### E. Protocols Tabled for Designated Review With Subsequent Revision and Approval Since the February 12<sup>th</sup> Meeting

1. None.

### F. Protocols Tabled for Re-Review at Next Convened Meeting

1. None.

### G. Significant Modifications Approved at the February 12<sup>th</sup> Meeting

1. Amendment #36 to [Redacted by agreement] Behavioral and Molecular Correlates of a Mouse model of Radiation-Induced Fatigue. [Redacted by agreement]

### H. Significant Modifications Tabled for Designated Review With Subsequent Revision and Approval Since the February 12<sup>th</sup> Meeting

1. None.

### I. Amendments approved by Designated Member Review per ACUC Policy since the February 12<sup>th</sup> Meeting

1. Amendment #3 to [Redacted by agreement] Renal tubule transporters in transgenic and knockout mice. [Redacted by agreement] One knockin mouse line was added.
2. Amendment #1 to [Redacted by agreement] Creation and breeding of genetically altered mice for studies of lipid, lipoprotein metabolism and atherosclerosis. [Redacted by agreement] Four new diets were added enriched with palmitoleic acid or eicosapentaenoic acid.

3. Amendment #3 to [Redacted by agreement] Mouse models for bone marrow failure syndromes and other hematological and non-hematological disorders [Redacted by agreement]. Added a new experiment to study the effect of toll-like receptor ligands interleukin-6, on immunity and hematopoiesis.
4. Amendment #32 to [Redacted by agreement] Gene transfer into non-human primate hematopoietic cells, [Redacted by agreement] The use of Hydroxyurea (HU) therapy was added.
5. Amendment #33 to [Redacted by agreement] Gene transfer into non-human primate hematopoietic cells, [Redacted by agreement] Updated Amendment 29 to include a broader dose scheduling for Calcium Chloride to counteract the administration of the anticoagulant citrate dextrose (ACD).
6. Amendment #34 to [Redacted by agreement] Gene transfer into non-human primate hematopoietic cells, [Redacted by agreement] This amendment is to see whether pretreatment with an anti-CD 154 (CD40L) monoclonal antibody (5C8) which blocks the CD40:CD40L pathways will more effectively allow targeting of TFH cells by FN18.
7. Amendment #1 to [Redacted by agreement] Maintaining and characterizing several mouse lines generated by the NHLBI Transgenic Core, [Redacted by agreement] To produce a mouse model for ALGS, the lab will mutate one amino acid in the jagged1 gene.
8. Amendment #2 to [Redacted by agreement] Maintaining and characterizing several mouse lines generated by the NHLBI Transgenic Core, [Redacted by agreement] Two mouse lines were added.
9. Amendment #6 to [Redacted by agreement] Murine Models of Experimental Asthma, [Redacted by agreement] [Redacted by agreement] Experiments to assess whether administration of HDL isolated from asthmatics and healthy individuals modifies lung cytokine production in recipient mice following intranasal administration.
10. Amendment #1 to [Redacted by agreement] Characterization of hematopoietic and pluripotent stem cells and their derivatives for the development of novel regenerative therapies, [Redacted by agreement] [Redacted by agreement] Baculovirus was added as an additional gene transfer vector to deliver template DNA into target cells.
11. Amendment #14 to [Redacted by agreement] Genetic Modifiers of Elastin Insufficiency, [Redacted by agreement] [Redacted by agreement] A low molecular-weight, gadolinium-based elastin-specific magnetic resonance contrast agent (ESMA), LMil 174 was added.

**J. Amendments approved by Conditional Administrative Process by APD since the February 12<sup>th</sup> Meeting**

1. Amendment #15 to [Redacted by agreement] Stem Cells and Neuro-Vascular Development and Patterning, [Redacted by agreement] Two mice strains will be transferred from John Hopkins.
2. Amendment #1 to [Redacted by agreement] Molecular Genetic Analysis of Zebrafish Lysosomal genes, [Redacted by agreement] The euthanasia protocol for zebrafish was modified.
3. Amendment #1 to [Redacted by agreement] Development and Regulation of Muscle Mitochondrial Networks, [Redacted by agreement] Three mice lines were added, and a co-investigator was added.
4. Amendment #6 to [Redacted by agreement] Studies of Meiotic Drive, [Redacted by agreement] A mice line was added.

**K. Amendments approved by Administrative Approval Process since the February 12<sup>th</sup> Meeting**

1. Amendment #10 to [Redacted by agreement] Gene transfer into non-human primate hematopoietic cells, [Redacted by agreement] One co-investigator was removed.
2. Amendment #14 to [Redacted by agreement] Stem Cells and Neuro-Vascular Development and Patterning, [Redacted by agreement] One co-investigator was added.
3. Amendment #3 to [Redacted by agreement] Improving NK cell homing and in-vivo tumor killing by media modification and/or genetic manipulation [Redacted by agreement] One co-investigator was removed.
4. Amendment #43 to [Redacted by agreement] Chimerism Analysis and Stem Cell Transplantation for the Treatment of Sickle Cell Disease [Redacted by agreement] Two animal facility locations were added.
5. Amendment #24 to [Redacted by agreement] Examination of knockout and transgenic mice to define the role of complement proteins in the immune response, [Redacted by agreement] Three co-investigator were added.

**L. Annual Reviews: Protocols to Be Continued with no anticipated changes for the coming year. Vote was Unanimous to Approve.**

1. [Redacted by agreement] Preparation of cerebellar Purkinje cell cultures from embryonic and newborn mice, [Redacted by agreement]
2. [Redacted by agreement] Murine Model of Vein Grafting, [Redacted by agreement]
3. [Redacted by agreement] Functional Study of hGC-1 Gene knock-out Mouse Model, [Redacted by agreement]

**M. Annual Reviews: Protocols to Be Closed**

1. None.

**N. Program Review**

1. The updated NHLBI ACUC Policy for Review of Protocols & Amendments was reviewed and unanimously Approved.
2. The SOP : Emergency Plan For Mass Euthanasia of Rodents in the ACRF Tower, was reviewed and unanimously Approved.
3. Dr.Hawkins reported the preliminary pathology of a blood clot in the trachea of a monkey on [Redacted by agreement] Apheresis procedure was performed on 3/10/2020; animal found dead on 3/11/2020. The PI came to the ACUC meeting and discussed the issue – investigators did not notice any problems during the procedure; SpO2 was 100%; animal had a normal recovery for 1.5hr post-procedure.

**O. Other Business**

- AAALAC site visit to NIH will be June 15 to 19; NHLBI visit will be on Monday and Tuesday.
- The Meeting Minutes from February 12, 2020 were reviewed and unanimously Approved.
- ACUC Training opportunities:
  - a) May 18, 2020, Scientists Center for Animal Welfare (SCAW) IACUC Training Workshop, NIH Natcher, Bethesda, MD. <https://scaw.com/iacuc-training-workshops/>

**Date of the Next Meeting:**

The date of the next meeting will be held on April 8, 2020 at 1:00 pm.

## **NHLBI ACUC MEETING MINUTES**

April 8, 2020

Virtual: via WebEx

1:00pm

### **Members Present**

Dr. Tish Murphy, Systems Biology Center, Chair ACUC

Redacted by agreement

Dr. James Hawkins, Animal Program Division, APD

Redacted by agreement

### **Members Absent**

Redacted by agreement

### **Guest**

Redacted by agreement

#### **A. New Protocols**

1. None.

#### **B. Protocols Submitted for Renewal**

1. None

#### **C. Protocols Requesting a Significant Modification**

1. Amendment #35 to Redacted by agreement Gene transfer into non-human primate hematopoietic cells, Redacted by agreement
  - ❖ This amendment was unanimously Approved with one Administrative change:  
Administrative change:
    - The Summary information was moved to Section F.
2. Amendment #1 to Redacted by agreement Electron microscopy of juvenile mouse heart, liver, brain and skeletal muscle, Redacted by agreement
  - ❖ This amendment was unanimously Approved with one Administrative change.  
Redacted by agreement recused herself from the vote.  
Administrative change:
    - Section B: “time pregnant” was added.

#### **D. Protocols Approved at the March 11<sup>th</sup> Meeting**

1. None.



**E. Protocols Tabled for Designated Review With Subsequent Revision and Approval Since the March 11<sup>th</sup> Meeting**

1. None.

**F. Protocols Tabled for Re-Review at Next Convened Meeting**

1. None.

**G. Significant Modifications Approved at the March 11<sup>th</sup> Meeting**

1. Amendment #16 to [Redacted by agreement] Stem Cells and Neuro-Vascular Development and Patterning, [Redacted by agreement]
2. Amendment #2 to [Redacted by agreement] Chimeric Antigen Receptor T-cell (CAR-T) therapy in non-human primates, [Redacted by agreement]

**H. Significant Modifications Tabled for Designated Review With Subsequent Revision and Approval Since the March 11<sup>th</sup> Meeting**

1. None.

**I. Amendments approved by Designated Member Review per ACUC Policy since the March 11<sup>th</sup> Meeting**

1. Amendment #1 to [Redacted by agreement] Training of Veterinary Support Personnel and Investigators – Rats, [Redacted by agreement]
2. Amendment #37 to [Redacted by agreement] Analysis of Transgenic and Knockout Mice for the Study of Cytokine Signaling Pathways, [Redacted by agreement]
3. Amendment #11 to [Redacted by agreement] Investigating the genetic mechanisms of cardiovascular diseases and cancer, [Redacted by agreement]
4. Amendment #5 to [Redacted by agreement] Analysis of ADP-ribosylhydrolase 3 (ARH3) and Tuberous Sclerosis Complex 2 (TSC2) knockout mouse, [Redacted by agreement]
5. Amendment #34 to [Redacted by agreement] Gene transfer into non-human primate hematopoietic cells, [Redacted by agreement]
6. Amendment #7 to [Redacted by agreement] Murine Models of Experimental Asthma, [Redacted by agreement]
7. Amendment #1 to [Redacted by agreement] The Molecular and Pathological Basis of Obesity and its Related Diseases, [Redacted by agreement]
8. Amendment #1 to [Redacted by agreement] Generation and characterization of Mucolin-2 (MUC2) knockout mice, [Redacted by agreement]
9. Amendment #2 to [Redacted by agreement] Characterization of hematopoietic and pluripotent stem cells and their derivatives for the development of novel regenerative therapies, [Redacted by agreement]
10. Amendment #3 to [Redacted by agreement] Breeding and Analysis of Myosin 18A knockout mice, [Redacted by agreement]
11. Amendment #15 to [Redacted by agreement] Genetic Modifiers of Elastin Insufficiency, [Redacted by agreement]
12. Amendment #25 to [Redacted by agreement] Examination of knockout and transgenic mice to define the role of complement proteins in the immune response, [Redacted by agreement]

13. Amendment #7 to [Redacted by agreement], Mouse Models of Glycogen Storage Disease Type II: Characterization and Therapy, [Redacted by agreement]
14. Amendment #7 to [Redacted by agreement] Studies of Meiotic Drive, [Redacted by agreement]

**J. Amendments approved by Conditional Administrative Process by APD since the March 11<sup>th</sup> Meeting**

1. None.

**K. Amendments approved by Administrative Approval Process since the March 11<sup>th</sup> Meeting**

1. None.

**L. Annual Reviews: Protocols to Be Continued with no anticipated changes for the coming year. Vote was Unanimous to Approve.**

1. [Redacted by agreement], ACUC Animal Holding Protocol, [Redacted by agreement]
2. [Redacted by agreement], Analysis of transgenic and knockout mice for the study of function of the chromatin-remodeling enzymes, [Redacted by agreement]
3. [Redacted by agreement] Murine Models of Experimental Asthma, [Redacted by agreement]
4. [Redacted by agreement] Mechanisms of dyslipidemia and atherosclerosis formation in Hamsters, [Redacted by agreement]

**M. Annual Reviews: Protocols to Be Closed**

1. [Redacted by agreement] CARS imaging of vascular permeability barriers, [Redacted by agreement]

**N. Program Review**

1. Reviewed the **Semiannual Program Review and Facility Inspection Checklist**
2. Reviewed and accepted the **"Semiannual Report: Animal Care & Use Program Review and facility inspection"**
  - Vote was unanimous to accept DVR inspectors in lieu of NHLBI ACUC (see 3/30/2020 emailed notification)
  - List of DVR ACUC facility inspectors are attached as **"DVR Spring inspection assignments"**
  - Vote was unanimous to accept NINDS inspectors in lieu of NHLBI ACUC to the MIF.
  - Vote was unanimous to accept [Redacted by agreement] inspection in lieu of 2 NHLBI ACUC members visit to [Redacted by agreement] Lab/animal procedure space.
  - Will inspect other facilities when safe and practical.
  - Discussed the **"OACU Guidance for Documenting Use of Waivers and Ad Hoc Inspectors in the 2020 Spring Semiannual Report Form"**
3. Dr. Hawkins gave update on the Animal facility due to pandemic: Single housed mice in the [Redacted by agreement] are having cage changes every other week. The [Redacted by agreement] is staffed with adequate supplies.
4. Pathology update for [Redacted by agreement] NHP study was given by Dr. Hawkins. He explained that no negligence was seen. Death may be due to possible prolonged clotting time (as anticoagulant used for apheresis procedure) combined with a small bleeding vessel in the trachea.

**O. Other Business**

- AAALAC site visit to NIH has been postponed until the Fall (October).
- FOIA received by NEI for reportable concerns.
- Minutes from March 11<sup>th</sup> ACUC meeting were Approved.

**Date of the Next Meeting:**

The date of the next meeting will be held on May 13, 2020 at 1:00 pm



## **NHLBI ACUC MEETING MINUTES**

May 13, 2020

Virtual: via WebEx

1:00pm

### **Members Present**

Dr. Tish Murphy, Systems Biology Center, Chair ACUC

Redacted by agreement

Dr. James Hawkins, Animal Program Division, APD

Redacted by agreement

### **Members Absent**

Redacted by agreement

### **Guest**

Redacted by agreement

### **A. New Protocols**

1. (b)(5)

- ❖ This protocol was Tabled and the decision was unanimous to review the modifications/changes by the Designated Member Review (DMR) process. T. Murphy and J. Hawkins will conduct the DMR. The modifications needed to secure final approval are:

#### **Stipulations:**

(b)(5)

(b)(5)

**B. Protocols Submitted for Renewal**

1. [Redacted by agreement], Surgery Services for Investigators from Non-NHLBI Institutes, [Redacted by agreement]  
❖ This protocol was unanimously Approved as written.

**C. Protocols Requesting a Significant Modification**

1. None.

**D. Protocols Approved at the April 8<sup>th</sup> Meeting**

1. [Redacted by agreement] Angiogenesis and Tissue Remodeling in Mice, [Redacted by agreement]
2. [Redacted by agreement] Behavioral and Molecular Correlates of a Mouse model of Radiation-Induced Fatigue, [Redacted by agreement].

**E. Protocols Tabled for Designated Review With Subsequent Revision and Approval Since the April 8<sup>th</sup> Meeting**

1. None.

**F. Protocols Tabled for Re-Review at Next Convened Meeting**

1. None.

**G. Significant Modifications Approved at the April 8<sup>th</sup> Meeting**

1. Amendment #1 to [Redacted by agreement] Electron microscopy of juvenile mouse heart, liver, brain and skeletal muscle, [Redacted by agreement]

**H. Significant Modifications Tabled for Designated Review With Subsequent Revision and Approval Since the April 8<sup>th</sup> Meeting**

1. None.

**I. Amendments approved by Designated Member Review per ACUC Policy since the April 8<sup>th</sup> Meeting**

1. Amendment #2 to [Redacted by agreement] Creation and breeding of genetically altered mice for studies of lipid, lipoprotein metabolism and atherosclerosis, [Redacted by agreement]
2. [Redacted by agreement] Amendment #4 to [Redacted by agreement] Mouse models for bone marrow failure syndromes and other hematological and non-hematological disorders, [Redacted by agreement]
3. Amendment #35 to [Redacted by agreement] Chimerism Analysis and Stem Cell Transplantation for the Treatment of Sickle Cell Disease, [Redacted by agreement]

**J. Amendments approved by Conditional Administrative Process by APD since the April 8<sup>th</sup> Meeting**

1. None.

**K. Amendments approved by Administrative Approval Process since the April 8<sup>th</sup> Meeting**

1. None.

**L. Annual Reviews: Protocols to Be Continued with no anticipated changes for the coming year. *Vote was Unanimous to Approve.***

1. [Redacted by agreement] Apolipoprotein and Lipid Metabolism in Normal, [Redacted by agreement] Hypertriglyceridemic and Transgenic Mice, [Redacted by agreement]
2. [Redacted by agreement] Stem Cells and Neuro-Vascular Development and Patterning, [Redacted by agreement]
3. [Redacted by agreement] A mouse model of lung and lymphatic lymphangioliomyomatosis, [Redacted by agreement]
4. [Redacted by agreement] Chimeric Antigen Receptor T-cell (CAR-T) therapy in non-human primates, [Redacted by agreement]

**M. Annual Reviews: Protocols to Be Closed**

1. None.

**N. Program Review**

1. The NHLBI Policy for protocol/amendment process was discussed and approved.
2. The OLAW site visit follow-up items were discussed:
  - a) OLAW report for all of the NIH IRP
  - b) NHLBI's specific findings
  - c) a list of compliments to NHLBI extracted from the OLAW report.

Other trans-NIH issues that will also affect us.

\*Counting mouse pups against the protocol. We haven't been doing that, but have started counts for the [Redacted by agreement] facility. NIH will need to require all facilities to report this to each IC.

\*Vet review of amendments will require an NIH update. However, I think we have already addressed that with our policy revisions at the March and April meetings.

\*Signage guidance from Safety for labs will need to be revised. "In several locations in different IC facilities, biohazard/chemical hazard signage on the door was inconsistent with the hazard at the room or cage level. Consequently, the PPE recommendation on the door may not be appropriate for the hazard being used. Signage should be appropriate and consistent to ensure worker protection."

3. Semi-annual Report was reviewed and accepted.

**O. Other Business**

- Return to Work Plan for NHLBI Animal Program was discussed (see attached)

- AAALAC site visit to NIH has been postponed until the Fall (October).

**Date of the Next Meeting:**

The date of the next meeting will be held on June 10, 2020 at 1:00 pm

## **NHLBI ACUC MEETING MINUTES**

June 10, 2020

Virtual: via WebEx

2:30pm

### **Members Present**

Dr. Tish Murphy, Systems Biology Center, Chair ACUC

Redacted by agreement

Dr. James Hawkins, Animal Program Division, APD

Redacted by agreement

### **Members Absent**

Redacted by agreement

### **Guest**

Redacted by agreement

### **A. New Protocols**

1. None.

### **B. Protocols Submitted for Renewal**

1. 

(b)(5)

❖ This protocol was Tabled and the decision was unanimous to review the modifications/changes by the Designated Member Review (DMR) process. T. Murphy and J. Hawkins will conduct the DMR. The modifications needed to secure final approval are:

Stipulations:

(b)(5)
2. 

Redacted by agreement

 Angiogenesis and Tissue Remodeling in Mice, 

Redacted by agreement

❖ This protocol was unanimously Approved as written.
3. 

Redacted by agreement

 Behavioral and Molecular Correlates of a Mouse model of Fatigue induced by Cancer Treatment, 

Redacted by agreement



- ❖ The focus of this project is fatigue as it relates to patients undergoing cancer treatment. Fatigue is induced in a mouse model using targeted radiation to the abdomen; other model is 5-FU treatment, which is a common cancer treatment used in humans.

- ❖ This protocol was unanimously Approved. [Redacted by agreement] recused herself from the vote.

4. [Redacted by agreement] NHLBI Transgenic/Knockout Mouse Production, [Redacted by agreement]  
 ❖ This protocol was unanimously Approved with an expiration date of 8/27/2020. [Redacted by agreement] recused himself from the vote.

### C. Protocols Requesting a Significant Modification

1. Amendment #2 to [Redacted by agreement] Ivabradine lowers heart rate by selectively inhibiting If channels, [Redacted by agreement]  
 ❖ This amendment was unanimously Approved as written. [Redacted by agreement] recused herself from the vote.

### D. Protocols Approved at the May 13<sup>th</sup> Meeting

1. [Redacted by agreement], Surgery Services for Investigators from Non-NHLBI Institutes, [Redacted by agreement]

### E. Protocols Tabled for Designated Review With Subsequent Revision and Approval Since the May 13<sup>th</sup> Meeting

1. None.

### F. Protocols Tabled for Re-Review at Next Convened Meeting

1. None.

### G. Significant Modifications Approved at the May 13<sup>th</sup> Meeting

1. Amendment #1 to [Redacted by agreement] Electron microscopy of juvenile mouse heart, liver, brain and skeletal muscle, [Redacted by agreement]

### H. Significant Modifications Tabled for Designated Review With Subsequent Revision and Approval Since the May 13<sup>th</sup> Meeting

1. None.

### I. Amendments approved by Designated Member Review per ACUC Policy since the May 13<sup>th</sup> Meeting

1. Amendment #1 to [Redacted by agreement] Mouse models for bone marrow failure syndromes and other hematological and non-hematological disorders, [Redacted by agreement]  
 [Redacted by agreement] Added a new study to test the therapeutic efficacy of Ruxolitinib in models of immune-mediated bone marrow failure.
2. Amendment #6 to [Redacted by agreement], Mouse models for bone marrow failure syndromes and other hematological and non-hematological disorders [Redacted by agreement]  
 [Redacted by agreement] Added two more Kinase inhibitors.
3. Amendment #36 to [Redacted by agreement] Gene transfer into non-human primate hematopoietic cells, [Redacted by agreement] (1) Increased busulfan dosing from 6

mg/kg/day to 10 mg/kg/day; (2) Added Baculovirus RD; Added Taurolidine-Citrate Solution as a catheter lock solution.

4. Amendment #36 to [Redacted by agreement] Chimerism Analysis and Stem Cell Transplantation for the Treatment of Sickle Cell Disease, [Redacted by agreement] Added the development of Galectin-1 flox transgenic mice and Galectin-1 knock out mice.
5. Amendment #8 to [Redacted by agreement] Studies of Meiotic Drive, [Redacted by agreement] Added new strains of Peromyscus mice.

**J. Amendments approved by Conditional Administrative Process by APD since the May 13<sup>th</sup> Meeting**

1. None.

**K. Amendments approved by Administrative Approval Process since the May 13<sup>th</sup> Meeting**

1. None.

**L. Annual Reviews: Protocols to Be Continued with no anticipated changes for the coming year. *Vote was Unanimous to Approve.***

1. [Redacted by agreement] Mouse Breeding Protocol for Preparation of Primary Mouse Melanocytes, [Redacted by agreement]
2. [Redacted by agreement] Neural/Glial Interactions, [Redacted by agreement]
3. [Redacted by agreement] Functional study of Olfm4 gene in the development, regeneration and neoplastic progression of murine prostate, [Redacted by agreement]
4. [Redacted by agreement] A mouse model for lymphoid malignancies, [Redacted by agreement]
5. [Redacted by agreement] Functional Study of OLFM4-RET Fusion Transgenic Mice, [Redacted by agreement]
6. [Redacted by agreement] Studies of Meiotic Drive, [Redacted by agreement]

**M. Annual Reviews: Protocols to Be Closed**

1. None.

**N. Program Review**

1. None.

**Date of the Next Meeting:**

No ACUC meeting in July

## **NHLBI ACUC MEETING MINUTES**

August 12, 2020

Virtual: via WebEx

1:00pm

### **Members Present**

Dr. Tish Murphy, Systems Biology Center, Chair ACUC

Redacted by agreement

Dr. James Hawkins, Animal Program Division, APD

Redacted by agreement

### **Guest**

Redacted by agreement

### **A. New Protocols**

1. Redacted by agreement Human renal cell carcinoma (RCC) murine model for the evaluation of therapeutic use of antigen specific T cells, Redacted by agreement
  - ❖ The objective is to evaluate if the findings seen in the lab can be attainable in a living organism (mouse), as a preliminary study before translating this into a first-in-human clinical trial for cancer patients. The tumor cells will be injected SQ into mice. The PI was reminded that each lot of Matrigel must be tested for rodent pathogens; the information should be requested from the manufacturer.
  - ❖ This protocol was unanimously Approved as written.

### **B. Protocols Submitted for Renewal**

1. Redacted by agreement Colony Health Surveillance – Rat, Redacted by agreement
  - ❖ This protocol was unanimously Approved as written.
2. Redacted by agreement Colony Health Surveillance - Mouse, Redacted by agreement
  - ❖ This protocol was unanimously Approved as written.
3. Redacted by agreement Training of Veterinary Support Personnel and Investigators - Mice, Redacted by agreement

❖ This protocol was unanimously Approved as written.

4. [Redacted by agreement], Training of Veterinary Support Personnel and Investigators – Rats, [Redacted by agreement]

❖ This protocol was unanimously Approved as written.

5. [Redacted by agreement], NHLBI Transgenic/Knockout Mouse Production, [Redacted by agreement]  
[Redacted by agreement]

❖ This protocol was unanimously Approved as written. [Redacted by agreement] recused himself from the vote.

6. [Redacted by agreement] Myocardial Infarct Cardiac Regeneration Model in Rhesus Monkey with iPSC Technology, [Redacted by agreement]

❖ This protocol was unanimously Approved as written with an expiration date of 10/30/2020.

7. [Redacted by agreement] Virulence of Mycobacterium abscessus toward zebrafish embryos, [Redacted by agreement]

❖ This protocol was unanimously Approved as written with an expiration date of 10/31/2020.

8. [Redacted by agreement] Mouse Models of Glycogen Storage Disease Type II: Characterization and Therapy, [Redacted by agreement]

❖ This protocol was unanimously Approved as written with an expiration date of 10/30/2020.

### C. Protocols Requesting a Significant Modification

1. None.

### D. Protocols Approved at the June 10<sup>th</sup> Meeting

1. [Redacted by agreement] Angiogenesis and Tissue Remodeling in Mice, [Redacted by agreement]  
2. [Redacted by agreement] Behavioral and Molecular Correlates of a Mouse model of Fatigue induced by Cancer Treatment, [Redacted by agreement]

### E. Protocols Tabled for Designated Review With Subsequent Revision and Approval Since the June 10<sup>th</sup> Meeting

1. [Redacted by agreement] Mapping the Function of the Mammalian Nephron (Rat): Main Protocol, [Redacted by agreement]  
2. [Redacted by agreement] A Humanized Sickle Cell Porcine Model for pre-clinical drug testing and other research applications in sickle cell disease, [Redacted by agreement]

### F. Protocols Tabled for Re-Review at Next Convened Meeting

1. None.

### G. Significant Modifications Approved at the June 10<sup>th</sup> Meeting

1. None.

## H. Significant Modifications Tabled for Designated Review With Subsequent Revision and Approval Since the June 10<sup>th</sup> Meeting

1. None.

## I. Amendments approved by Designated Member Review per ACUC Policy since the June 10<sup>th</sup> Meeting

1. Amendment #7 to [Redacted by agreement] Mouse models for bone marrow failure syndromes and other hematological and non-hematological disorders, [Redacted by agreement]
2. Amendment #38 to [Redacted by agreement] Analysis of Transgenic and Knockout Mice for the Study of Cytokine Signaling Pathways, [Redacted by agreement]
3. Amendment #39 [Redacted by agreement] Analysis of Transgenic and Knockout Mice for the Study of Cytokine Signaling Pathways, [Redacted by agreement]
4. Amendment #12 to [Redacted by agreement] Investigating the genetic mechanisms of cardiovascular diseases and cancer, [Redacted by agreement]
5. Amendment #35 to [Redacted by agreement] Gene transfer into non-human primate hematopoietic cells, [Redacted by agreement]
6. Amendment #38 to [Redacted by agreement] Gene transfer into non-human primate hematopoietic cells, [Redacted by agreement]
7. Amendment #39 to [Redacted by agreement] Gene transfer into non-human primate hematopoietic cells, [Redacted by agreement]
8. Amendment #17 to [Redacted by agreement] Stem Cells and Neuro-Vascular Development and Patterning, [Redacted by agreement]
9. Amendment #14 to [Redacted by agreement] Studies of Cardioprotection in Perfused heart and Isolated cardiac myocytes, [Redacted by agreement]
10. Amendment #16 to [Redacted by agreement] Studies of Cardioprotection in Perfused heart and Isolated cardiac myocytes, [Redacted by agreement]
11. Amendment #18 to [Redacted by agreement] Studies of Cardioprotection in Perfused heart and Isolated cardiac myocytes, [Redacted by agreement]
12. Amendment #8 to [Redacted by agreement] Murine Models of Experimental Asthma, [Redacted by agreement]
13. Amendment #2 to [Redacted by agreement] Characterization of hematopoietic and pluripotent stem cells and their derivatives for the development of novel regenerative therapies, [Redacted by agreement]
14. Amendment #12 to [Redacted by agreement] Myocardial Infarct Cardiac Regeneration Model in Rhesus Monkey with iPSC Technology, [Redacted by agreement]
15. Amendment #16 to [Redacted by agreement] Genetic Modifiers of Elastin Insufficiency, [Redacted by agreement]
16. Amendment #2 to [Redacted by agreement] Development and Regulation of Muscle Mitochondrial Networks, [Redacted by agreement]
17. Amendment #26 to [Redacted by agreement] Examination of knockout and transgenic mice to define the role of complement proteins in the immune response, [Redacted by agreement]
18. Amendment #2 to [Redacted by agreement] Ivabradine lowers heart rate by selectively inhibiting If channels, [Redacted by agreement]
19. Amendment #9 to [Redacted by agreement] Studies of Meiotic Drive, [Redacted by agreement]
20. Amendment #8 to [Redacted by agreement] Mice Models of Nontuberculous Mycobacteria (NTM) Lung Disease, [Redacted by agreement]

## J. Amendments approved by Conditional Administrative Process by APD since the June 10<sup>th</sup> Meeting

1. None.



**K. Amendments approved by Administrative Approval Process since the April 8<sup>th</sup> Meeting**

1. None.

**L. Annual Reviews: Protocols to Be Continued with no anticipated changes for the coming year. *Vote was Unanimous to Approve.***

1. [Redacted by agreement] Investigation of human iPSC's and their derivatives in the NSG mouse model, [Redacted by agreement]
2. [Redacted by agreement] Maintaining and characterizing several mouse lines generated by the NHLBI, [Redacted by agreement]
3. [Redacted by agreement] Immunodeficient mice for engraftment of human cells, [Redacted by agreement]
4. [Redacted by agreement] Breeding and Analysis of Myosin 18A knockout mice, [Redacted by agreement]
5. [Redacted by agreement], Investigations into the role of extracellular vesicles in the transmission of viral pathogens, [Redacted by agreement]
6. [Redacted by agreement] Technical feasibility of transmission optical spectroscopy in the mouse heart, in vivo, [Redacted by agreement]
7. [Redacted by agreement] Immunodeficient mice for engraftment of human cells, [Redacted by agreement]
8. [Redacted by agreement] Mitochondrial characteristics in metabolically active tissues of the Least Shrew, [Redacted by agreement]
9. [Redacted by agreement] Mice Models of Nontuberculous Mycobacteria (NTM) Lung Disease, [Redacted by agreement]

**M. Annual Reviews: Protocols to Be Closed**

1. None.

**N. Program Review**

- 1) For Non-pharmaceutical grade drugs, discussed adding a statement for the purity, grade and stability.
  - 2) Discussed the scientific review of NHP protocol which will be performed through the NHLBI Scientific Director.
  - 3) Discussed creating an Adoption policy
  - 4) Discussed the revised ARAC Guidelines:
- **C.3. Changes to Animal Study Proposals -**  
[https://oacu.oir.nih.gov/sites/default/files/uploads/arac-guidelines/c3\\_asp-changes.pdf](https://oacu.oir.nih.gov/sites/default/files/uploads/arac-guidelines/c3_asp-changes.pdf)
  - **C.6. Review and Approval of Animal Study Proposals (ASP) and Significant Changes -** [https://oacu.oir.nih.gov/sites/default/files/uploads/arac-guidelines/c6\\_review-asp-significant-changes.pdf](https://oacu.oir.nih.gov/sites/default/files/uploads/arac-guidelines/c6_review-asp-significant-changes.pdf)
    - The **NHLBI ACUC Policy for Review of Protocols & Amendments** was reviewed for the relevant sections for ASP review/significant changes, as relates to the revised ARAC Guideline (C6 - Review and Approval of Animal Study Proposals (ASP) and Significant Changes).
    - There was unanimous approval by all ACUC members to accept this policy. An email from the one member who had to leave the meeting during this portion of the discussion was received; email stated her approval of this policy. Future members will need to be informed of these policies.

New ACUC Reference Document:

- **Example IC Policy for Changes to ASPs (including VVC) -**  
[https://oacu.oir.nih.gov/sites/default/files/uploads/information-for-acuc-members/example\\_acucpolicy\\_changes.pdf](https://oacu.oir.nih.gov/sites/default/files/uploads/information-for-acuc-members/example_acucpolicy_changes.pdf)

New ARAC Guideline:

- **B.19. Investigator-Managed, Small-Scale Zebrafish Facilities -**  
[https://oacu.oir.nih.gov/sites/default/files/uploads/arac-guidelines/b19\\_investigator-managed-zebrafish.pdf](https://oacu.oir.nih.gov/sites/default/files/uploads/arac-guidelines/b19_investigator-managed-zebrafish.pdf)

**O. Other Business**

- 1) Explained that the FOIA for Redacted by agreement baboon transplant protocols has been prepared and is to be sent to the requestor.
- 2) Stated that Protocols which are over 10 years old will be cleared from IASP database.
- 3) Reviewed and Approved the Meeting Minutes from May 13, 2020 and April 8, 2020.

**Adjournment:** The meeting adjourned at 2:15. The next meeting is scheduled for Wednesday, September 9, 2020 at 1:00 pm via WebEx.

## **NHLBI ACUC MEETING MINUTES**

September 9, 2020

Virtual: via WebEx

1:00pm

### **Members Present**

Dr. Tish Murphy, Systems Biology Center, Chair ACUC

Redacted by agreement

Dr. James Hawkins, Animal Program Division, APD

Redacted by agreement

### **Guest**

Redacted by agreement

### **A. New Protocols**

1. (b)(5)



- ❖ This protocol was Tabled and the decision was unanimous to review the modifications/changes by the Designated Member Review (DMR) process. T. Murphy and J. Hawkins will conduct the DMR. The modifications needed to secure final approval are:

Stipulations:

(b)(5)

(b)(5)

## B. Protocols Submitted for Renewal

1. [Redacted by agreement] Breeding and Analysis of CARMIL-1 Knock-out mice,  
[Redacted by agreement]  
❖ This protocol was unanimously Approved as written.
2. [Redacted by agreement] Training of Veterinary Support Personnel and  
Investigators - Pigs, [Redacted by agreement]  
❖ This protocol was unanimously Approved as written.
3. [Redacted by agreement] Virulence of Mycobacterium abscessus toward  
zebrafish embryos, [Redacted by agreement]  
❖ This protocol was unanimously Approved as written.
4. [Redacted by agreement] Examination of knockout and transgenic mice to define the role of  
complement proteins in the immune response, [Redacted by agreement]  
❖ This protocol was unanimously Approved as written with an expiration date of  
11/30/2020.

## C. Protocols Requesting a Significant Modification

1. Amendment #1 to [Redacted by agreement] Behavioral and Molecular Correlates of a Mouse  
model of Fatigue induced by Cancer Treatment, [Redacted by agreement]  
❖ This amendment was unanimously Approved as written. [Redacted by agreement] recused herself  
from the vote.

2. (b)(5)  
❖ This amendment was Tabled and the decision was unanimous to review the  
modifications/changes by the Designated Member Review (DMR) process. T.  
Murphy and J. Hawkins will conduct the DMR. The modifications needed to secure  
final approval are:  
Stipulations:

(b)(5)

3. Amendment #1 to [Redacted by agreement] Primary neuron preparation from mouse embryo  
brain tissue, [Redacted by agreement]  
❖ This amendment was Approved as written.

## D. Protocols Approved at the August 12<sup>th</sup> Meeting

1. [Redacted by agreement] Colony Health Surveillance – Rat [Redacted by agreement]
2. [Redacted by agreement] Colony Health Surveillance – Mouse, [Redacted by agreement]
3. [Redacted by agreement] Training of Veterinary Support Personnel and Investigators - Mice,  
[Redacted by agreement]

4. [Redacted by agreement] Training of Veterinary Support Personnel and Investigators - Rats, [Redacted by agreement]
5. [Redacted by agreement] NHLBI Transgenic/Knockout Mouse production, [Redacted by agreement]
6. [Redacted by agreement] Human renal cell carcinoma (RCC) murine model for the evaluation of therapeutic use of antigen specific T cells, [Redacted by agreement]

**E. Protocols Tabled for Designated Review With Subsequent Revision and Approval Since the August 12<sup>th</sup> Meeting**

1. None.

**F. Protocols Tabled for Re-Review at Next Convened Meeting**

1. None.

**G. Significant Modifications Approved at the August 12<sup>th</sup> Meeting**

1. None.

**H. Significant Modifications Tabled for Designated Review With Subsequent Revision and Approval Since the August 12<sup>th</sup> Meeting**

1. None.

**I. Amendments approved by Designated Member Review per ACUC Policy since the August 12<sup>th</sup> Meeting**

1. Amendment #7 to [Redacted by agreement] Training of Veterinary Support Personnel and Investigators – Mice [Redacted by agreement] The ability to train staff on performing mouse embryo brain collections was added.
2. Amendment #10 to [Redacted by agreement] Murine Models of Experimental Asthma, [Redacted by agreement] [Redacted by agreement] An additional experiment was added where both Apo1 KO mice and wild type, C57Bl/6 mice will be feed either a 60% high-fat diet or a 10% fat diet, as a control.

**J. Amendments approved by Conditional Administrative Process by APD since the August 12<sup>th</sup> Meeting**

1. Amendment #18 to [Redacted by agreement] Stem Cells and Neuro-Vascular Development and Patterning, [Redacted by agreement] Two mouse lines were added.
2. Amendment #19 to [Redacted by agreement] Stem Cells and Neuro-Vascular Development and Patterning, [Redacted by agreement] A mouse line was added.
3. Amendment #11 to [Redacted by agreement] Studies of Meiotic Drive, [Redacted by agreement] A mouse line was added.

**K. Amendments approved by Administrative Approval Process since the August 12<sup>th</sup> Meeting**

1. Amendment #21 to [Redacted by agreement] Studies of Cardioprotection in Perfused heart and Isolated cardiac myocytes, [Redacted by agreement] Three co-investigators were removed.
2. Amendment #3 to [Redacted by agreement] Characterization of hematopoietic and pluripotent stem cells and their derivatives for the development of novel regenerative therapies, [Redacted by agreement] One co-investigators was added and two co-investigators were removed.



3. Amendment #16 to [Redacted by agreement] Investigating the genetic mechanisms of cardiovascular diseases and cancer, [Redacted by agreement] Two co-investigators were removed.

**L. Annual Reviews: Protocols to Be Continued with no anticipated changes for the coming year. *Vote was Unanimous to Approve.***

1. [Redacted by agreement] Investigation of human iPSC's and their derivatives in the NSG mouse model, [Redacted by agreement]
2. [Redacted by agreement] Maintaining and characterizing several mouse lines generated by the NHLBI, [Redacted by agreement]
3. [Redacted by agreement] Immunodeficient mice for engraftment of human cells, [Redacted by agreement]
4. [Redacted by agreement] Generation and characterization of Mucolin-2 (MUC2) knockout mice, [Redacted by agreement]
5. [Redacted by agreement] Breeding and Analysis of Myosin 18A knockout mice, [Redacted by agreement]
6. [Redacted by agreement] Analysis of cerebral ischemia in ADP-ribosyl hydrolase transgenic and knockout mouse, [Redacted by agreement]
7. [Redacted by agreement] Investigations into the role of extracellular vesicles in the transmission of viral pathogens, [Redacted by agreement]
8. [Redacted by agreement] Technical feasibility of transmission optical spectroscopy in the mouse heart in vivo, [Redacted by agreement]
9. [Redacted by agreement] Immunodeficient mice for engraftment of human cells, [Redacted by agreement]
10. [Redacted by agreement] Mitochondrial characteristics in metabolically active tissues of the Least Shrew, [Redacted by agreement]
11. [Redacted by agreement] Mice Models of Nontuberculous Mycobacteria (NTM) Lung Disease, [Redacted by agreement]

**M. Annual Reviews: Protocols to Be Closed**

1. None.

**N. Program Review**

- 1) Discussed the recertification of Biosafety Cabinets in labs + animal procedure areas -- DOHS has informed animal areas that there is a delay in routine BSC certifications due to the shutdown. The current priority is Emergency work, Patient Care, and COVID Research. DOHS will catch up as they can.
- 2) The Fall Semi-annual facility visits will include:
  - a. 1 member for non-USDA species (mice, rats)
  - b. 2 members for USDA covered species (pigs, rabbits, shrews, monkeys)

**O. Other Business**

- 1) Discussed the OMS AEP delays for new hires and backlog of TB testing due to COVID.

**Adjournment:** The meeting adjourned at 1:55 pm. The next meeting is scheduled for Wednesday, October 14, 2020 at 1:00 pm via WebEx.